

# The Prospect of Income-Contingent Loan (ICL) in Malaysia Higher Education Financing: Deterministic and Stochastic Method in Modelling Income

SYAZA NAWWARAH ZEIN ISMA

PHD CANDIDATE, AUSTRALIA NATIONAL UNIVERSITY

CHAIR: TIMOTHY HIGGINS

PANEL MEMBERS: BRUCE CHAPMAN, AARON BRUHN

# Presentation Outline

- Problems in Malaysia student loan (PTPTN)
  - low repayment rate
  - rising rate of loan default
  - reduce access to full loan amount, now means-tested
- Issue of Loan Default: **Repayment burden** factor. Can Income-Contingent Loan offers solution?
  - Time-based (conventional loan) vs income-based repayment (income-contingent loan)
- Prospect of Income-Contingent Loan for Malaysia By Modelling Analysis
  - Student's contribution
  - Taxpayers' cost

# Is Repayment burden in time-based loan a reason for default?

$$\text{Repayment burden in period } t = \frac{\text{Loan repayment in period } t}{\text{Income in period } t}$$

Principal Amount Borrowed (AUD)

6,157

Repayment period

10 years

Nominal interest charge on PTPTN loan

1.00%

Price Inflation

2.90%

Real interest rate

-1.90%

Bond rate

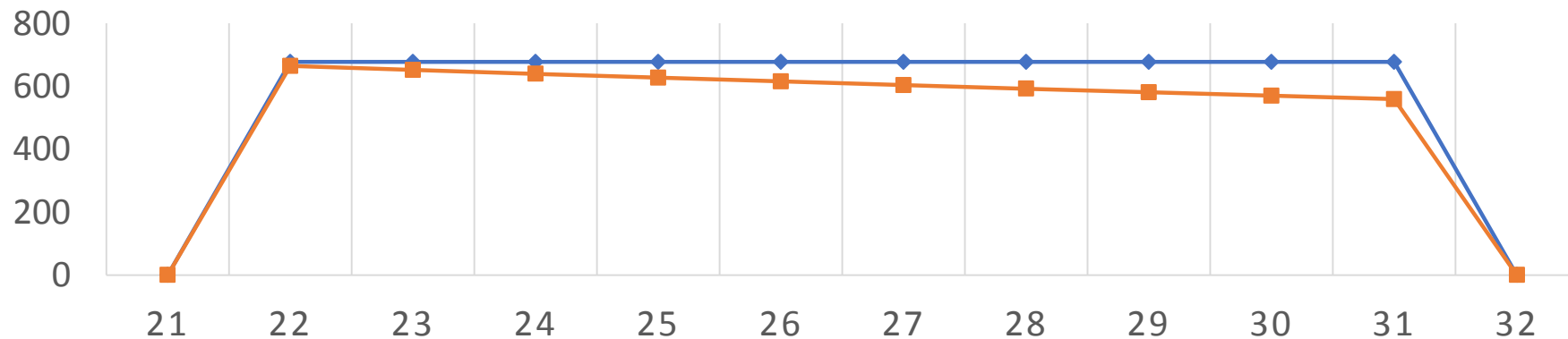
3.70%

(i)

## ANNUAL REPAYMENT CONVENTIONAL LOAN (AUD)

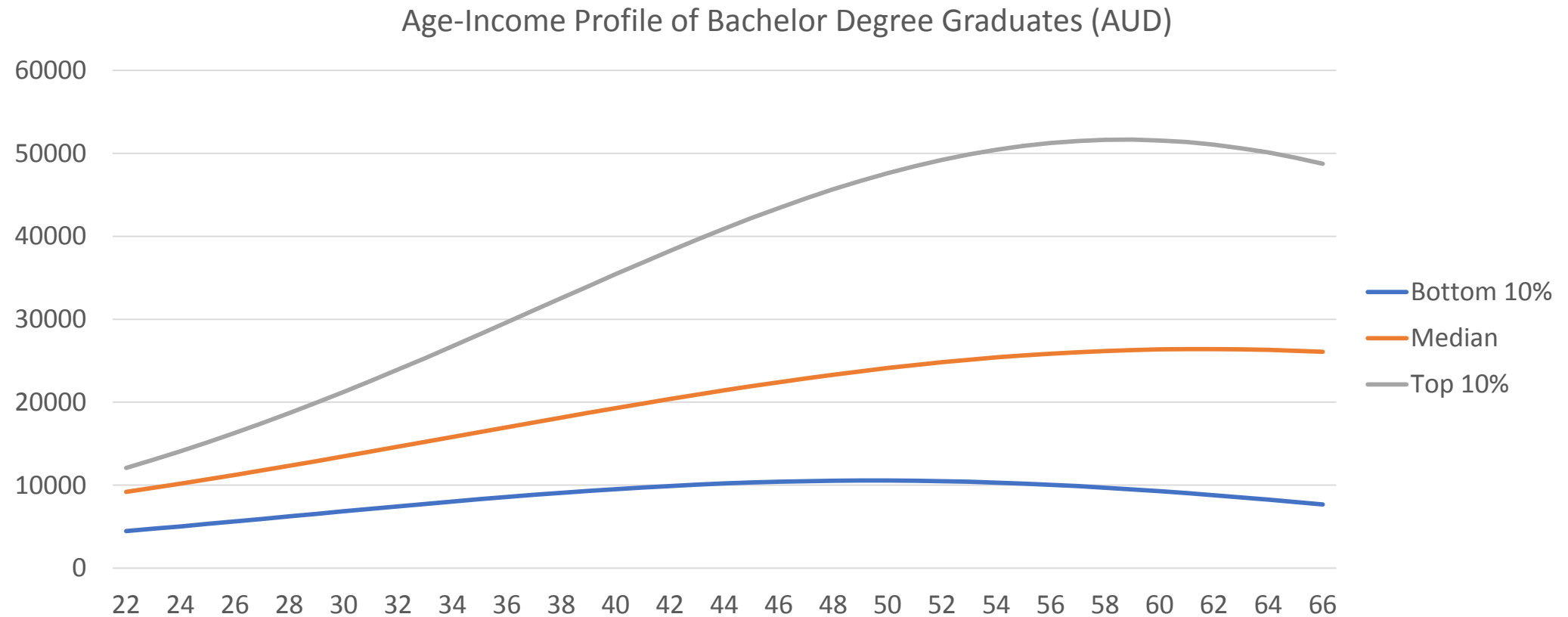
1AUD = MYR 3.24

—◆— Nominal Annual Repayment    —■— Real Annual Repayment



$$\text{Repayment burden in period } t = \frac{\text{Loan repayment in period } t}{\text{Income in period } t}$$

## (ii) Income Profile

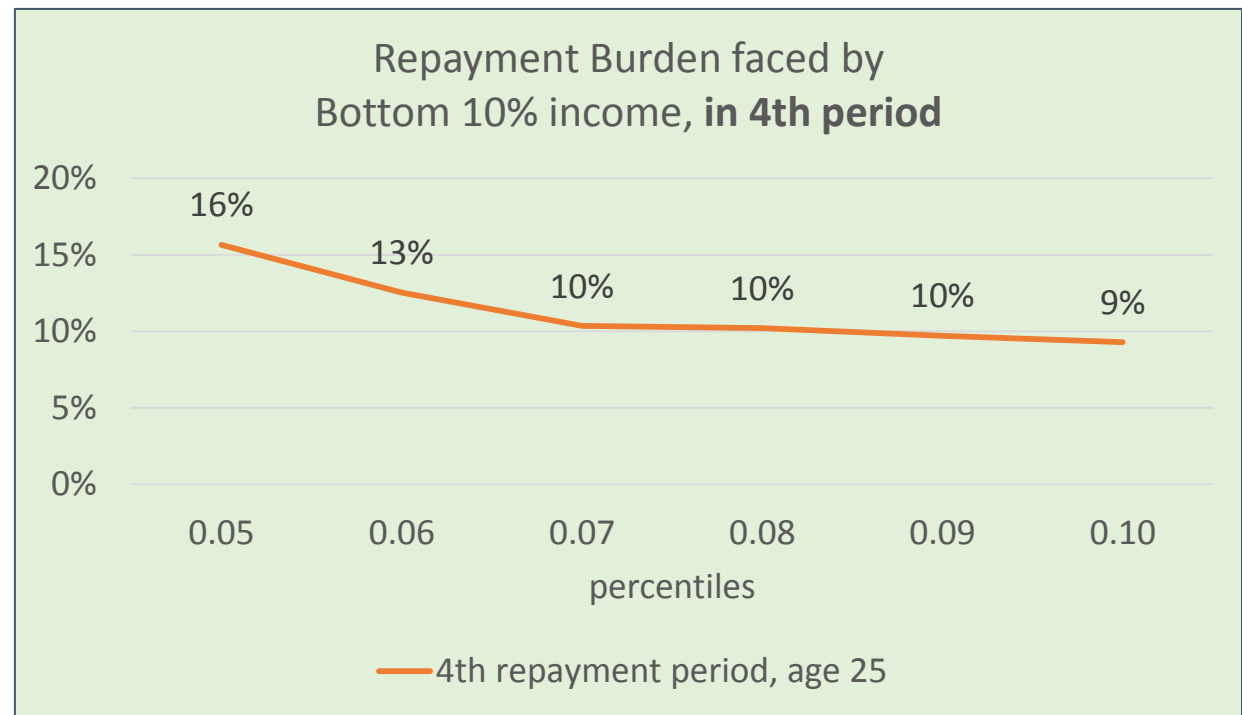
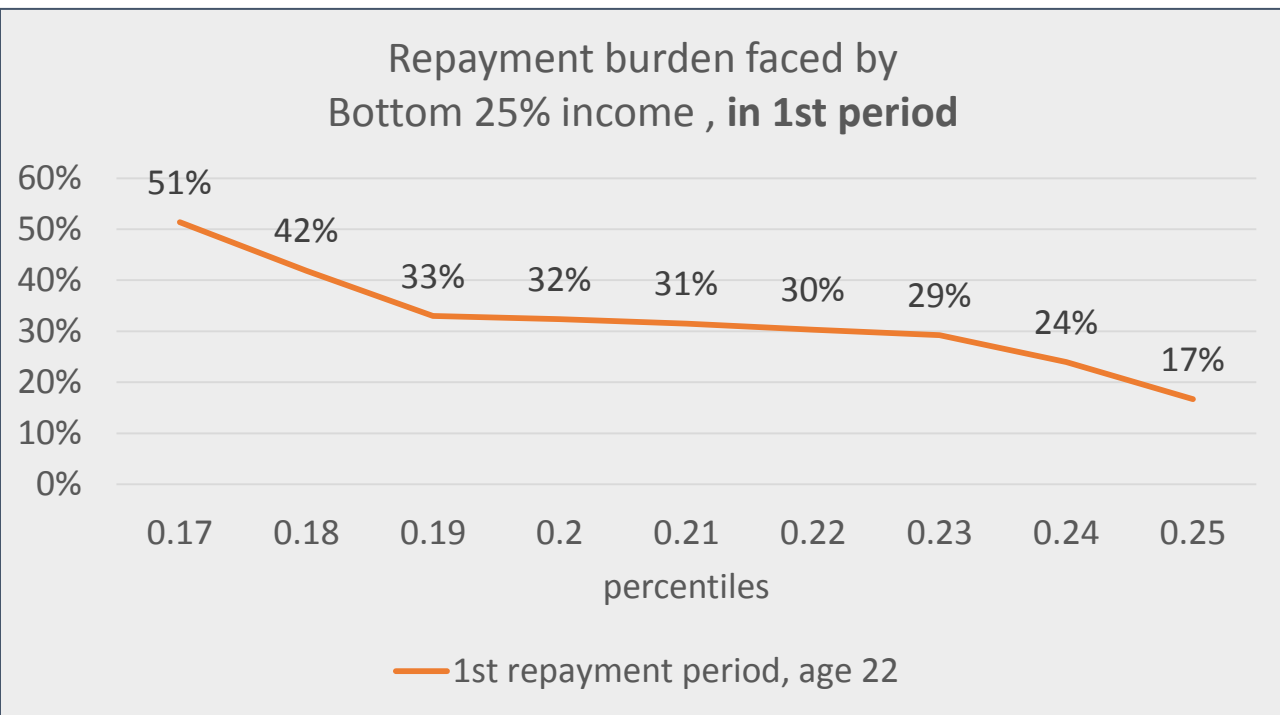


# Is Repayment burden in time-based loan a reason for default?

iii)

Zero Income in Lower Percentiles among Bachelor Degree Graduates

Repayment period	1	4
Age	22	25
Male	16%	4%
Female	23%	10%

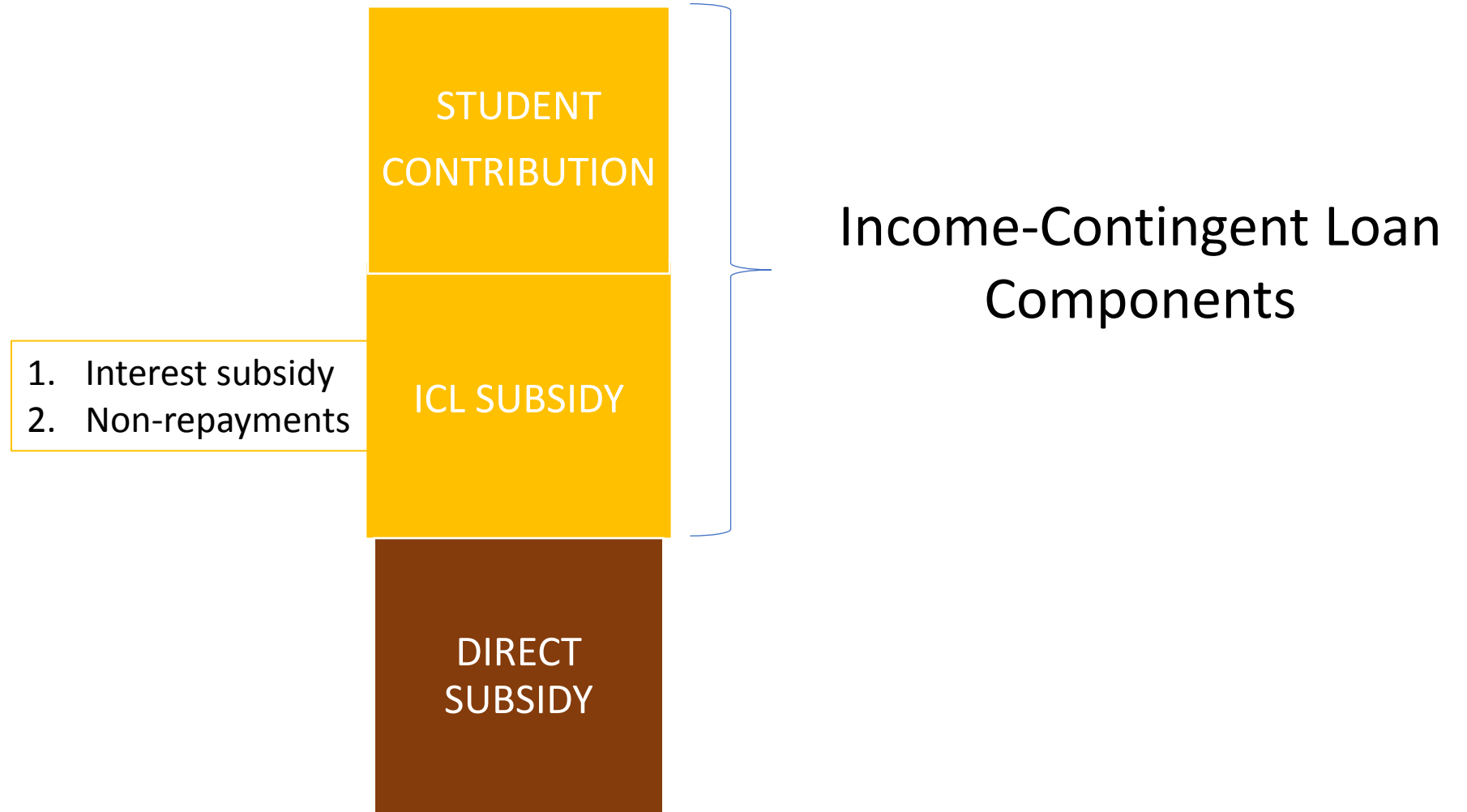


Can Income-Contingent Loan offers solution to problem in time-based/conventional loan in existing PTPTN scheme?

### **Attractive Features of ICL**

- insurance against adverse labour market outcome via
  - i) Repayment is contingent on income,
  - ii) No repayment is due if income is below the initial income repayment threshold
  - iii) **Repayment burden is capped by law.** Australia (8% of income), UK (9% flat of margin of income)
- **Consumption smoothing** due to affordable repayment
- Possible to **design ICL that keep low taxpayers subsidy**

# Income-Contingent Loan Breakdown



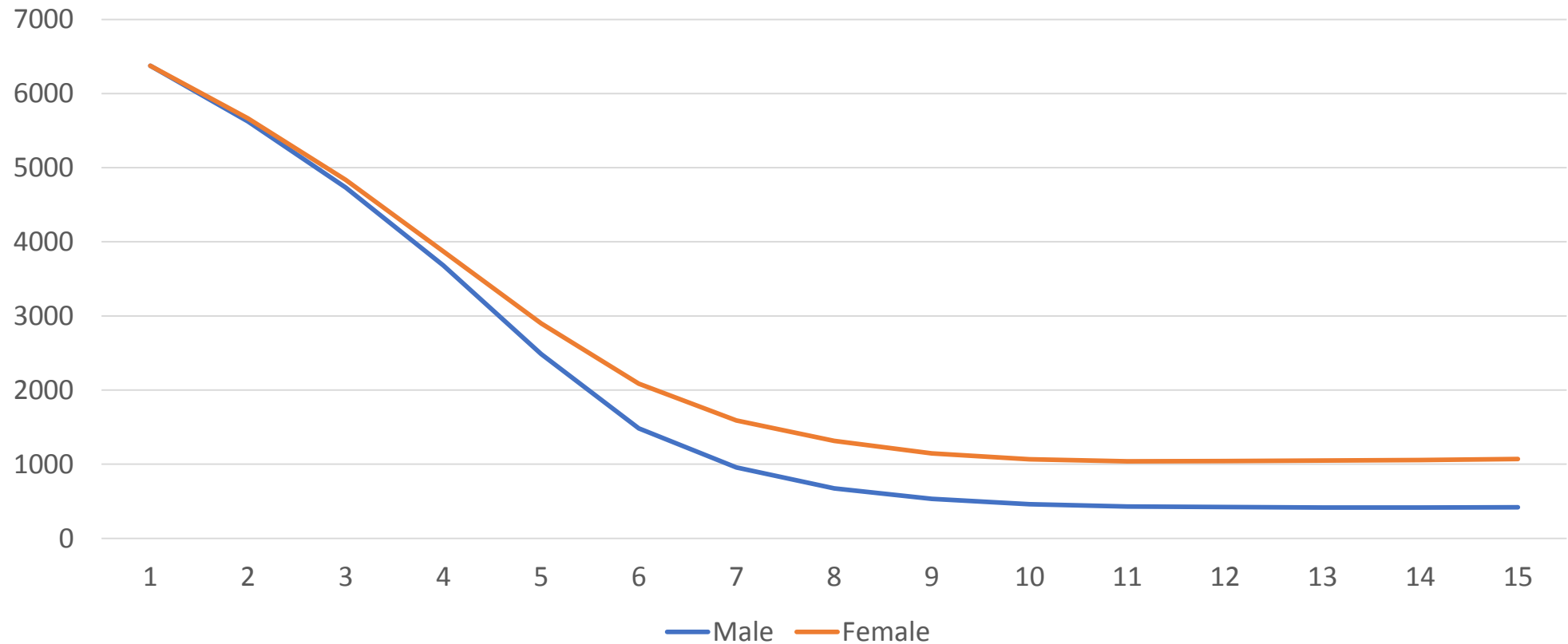
# Costs of Hypothetical Income-Contingent Loan for Malaysia (static assumption)

Design Options	Loan amount (AUD)	Repayment threshold	Loan indexation	Loan surcharge
A	6,020	Bottom 25% income	CPI 2.9%	0%
B	6,020	Bottom 25% income	Bond rate 3.7%	0%
C	6,020	Bottom 25% income	CPI 2.9%	5%



# Loan Outstanding Estimates (Option A)

Average Loan Outstanding Estimates  
for Bachelor Degree Graduates (nominal AUD)



## Subsidy Distribution for Bachelor degree Graduates

### Average Subsidy Ratio

	Male	Female
Option A	8.5%	14.8%
Option B	4.3%	10.8%
Option C	4.0%	10.6%

# Income-Contingent Loan Costs under Dynamic Approach in Modelling Income

*What are the implications of model assumptions to ICL costs when incorporating income and labour force mobility into the model structure over the projection period?*

*How do we use cross-sectional data to model transitions of income and mobility in labour force state?*

# Appendix

## PTPTN Issues & Challenges

### 1. Low repayment rate

Year	Accumulated repayment rate (%)	Accumulated non-repayment rate (%)
2011	54.61%	45.39%
2012	48.73%	51.27%
2013	49.29%	50.71%
2014	45.00%	55.00%
2015	45.68%	54.32%

### 2. Rising loan default

- As of 31 Aug 2012: AUD 907.4 million by 346, 470 borrowers

As of 30 Sept 2015: AUD 1.51 billion by 607,842 borrowers

2015 average amount per defaulter was about USD 2488

# Appendix

## 3. New policy: reduction in loan amount per student & loan amount eligibility based on means-tested criteria

Issues: **actual efficacy of the new policy?**

### i) Reduction in loan amount per student

HE Institutions by level of study	Previous Scheme		New Scheme		
	Full Loan	Partial Loan	Maximum Loan	75% Partial Loan	50% Partial Loan
<b>Public Universities and Polytechnics</b>					
Diploma	5000	2500	4750	3560	2,380
Bachelor's degree	6500	3000	6180	4630	3,090
<b>Private Institutions</b>					
Diploma	8000	8000	6800	5100	3,400
Bachelor's degree	16000	13000	13600	10200	6,800

### ii) Capped loan amount based on means-tested

Maximum eligible loan	Criteria
Maximum	Student or guardian is a BR1M recipient
75% of Maximum	Household income $\leq$ MYR 8,000 & not BR1M recipient
50% of Maximum	Household income $>$ MYR 8,000 & not BR1M recipient

# Appendix

## Threshold for Options A to C

Threshold level	Repayment rate	Income Threshold
T1	0.02	12388
T2	0.03	14133
T3	0.04	18253
T4	0.05	23266
T5	0.06	27262
T6	0.07	32293
T7	0.08	37538
T8	0.09	41068
T9	0.1	45543
T10	0.11	49560